



Program Specifications For Master Degree: in Medical Parasitology

Program type: single

Department offering the training program: Department of Medical Parasitology

Program code: 805

Total credit points: 140

Academic year: 2015/2016

Date of specification approval: July 2015

Program coordinator: Prof. Dr. Jomana Abd El-aziz- Prof. Dr. Safeya El- Bassiouni

External evaluators: Prof. Dr. Nashaat El-Sayed Nasef (Prof. of Parasitology Monofeya University)

I- Aim of Program

This program aims to provide core training in the theoretical and practical aspects of Medical Parasitology, covering the protozoan and metazoan parasites of humans, the vectors which transmit them, and provide students with specialized skills that enable them pursue a career in research, control and teaching related to Medical Parasitology. Program helps post-graduate students enter a range of global health fields including diagnostics, applied basic research and control to higher degree studies and academic/teaching-related positions.

II. Intended learning outcomes:

A) Knowledge and understanding: By the end of the program the candidate should be able to;

- 1) Describe the world distribution of important parasitic infections and the epidemiologic principles and the effect of social and demographic patterns on parasitic disease and vulnerability
- 2) Recognize the biology and the life cycles of the major parasites and of their vectors or intermediate hosts.
- 3) Identify the pathogenesis, clinical features, differential diagnosis and complications of the major parasitic diseases and the immune responses to these parasites
- 4) Explain the diversity of host -parasite interactions

- 5) Distinguish the most important immunological features related to the major parasitic infections of man
- 6) Point out the methods of recovery of parasites and their culture methods as well as immunological and molecular methods used for diagnosis of parasitic infections
- 7) Define the principles of management for common parasitic diseases and life-threatening conditions
- 8) Locate the strategies for control of the vectors and intermediate hosts of human parasites.
- 9) Distinguish the key aspects of vector behaviour, vector ecology and vector-parasite interactions and recognize how these features impact on the epidemiology and control of vector-borne diseases
- 10) Identify chemical, physical and biological methods of controlling vectors and intermediate hosts
- 11) Recognize the various types of immune responses elicited by parasites
- 12) Describe the theory, principles and development of a range of advanced diagnostic techniques including those currently used in immune and molecular Parasitology
- 13) Recognize the principles underpinning important techniques in molecular biology and their applications in laboratory research on infectious diseases
- 14) Outline concepts underlying the design of research studies

B) Intellectual skills: By the end of the program the candidate should be able to;

- 1) Analyse clinical and investigational data to develop skill of logic reasoning for clinical problem solving.
- 2) Interpret experimental data in an appropriate scientific format.
- 3) Specify the main areas of research in a particular subject and explain basic approaches to the design and interpretation of multivariable analysis models.
- 4) Criticize published scientific papers in various areas
- 5) Summarize the important unanswered questions in particular scientific works
- 6) Recommend methods for dealing with different scientific problems
- 7) Design an appropriate research work for a given scientific topic dilemma and provide a rationale for this.

C) Professional and practical skills: By the end of the program the candidates should be able to;

- 1) Diagnose & describe parasites by microscopy.
- 2) Prepare the various parasitic stages both free and in tissues and to report properly positive findings in different samples
- 3) Hold advanced diagnostic, molecular, immunological, genetic, ecological and/or control aspects of the subject
- 4) Prepare a laboratory or field based research project, critically analyse and interpret data with minimal supervision

D) General and transferable skills: By the end of the program the candidates should be able to;

- 1) Acquire the ability to use computers efficiently in reaching biomedical information to remain updated with advances in knowledge and practice
- 2) Acquire the capacity of effective communication with those involved in conducting public health research.
- 3) Integrate scientific information effectively in scientific meetings as well as scientific conferences, using a variety of techniques including oral talks or poster presentation and responding to oral questioning.
- 4) Integrate a range of practical techniques and tools used in teaching or research on different areas of Parasitology field
- 5) Accept the institutional code of conduct towards the role of staff and co-staff members regardless of degree or occupations

III. Academic standards

1. Academic reference standards: The academic standards of Parasitology program is adopted and accredited by the departmental council

2. External References for Standards:

This program is unique since it incorporated different topics from different disciplines.

IV. Program Admission Requirements

According to the bylaws of the faculty of medicine Cairo University, applicants should have M.B.B.Ch degree (of at least good grade) or equivalent degree. Admission for the program is open twice a year (during April and October).

V. Program Structure and Contents

The program contains compulsory and elective modules. The compulsory modules are started in November each year to allow recently admitted candidates to participate in the course. The related schedules either of theoretical or practical parts are available in October each year. Each module lasts from 10 to 15 weeks according to the related topics.

Program duration: three years

Total credit points: 140

Program structure:

First part: 1.5 years:

40 credit points

- | | |
|--|------------------------|
| ○ Compulsory courses | 8 credit points |
| 1) Helminthology | 4 credit points |
| 2) Immunology | 2 credit points |
| 3) Molecular biology | 2 credit point |
| ○ Elective courses: choose one course for | 1 credit points |
| a) Special laboratory investigations | 1 credit point |

- b) Fundamental microscopy 1 credit point
- **Scientific activities** 1 credit point
- **Practical training program** 30 credit points

Second part: 1.5 years: 100 credit points

- **Compulsory courses:** 13 credit points
 - 4) Protozoology 4 credit points
 - 5) Entomology 4 credit points
 - 6) Immuno and molecular Parasitology 2 credit points
 - 7) Applied Parasitology 3 credit points
- **Elective courses:** choose one course for credit points
 - c) Advanced Diagnostic Parasitology -
 - d) Design and analysis of epidemiological studies -
- **Scientific activities** 2 credit points
- **Practical training program** 45 credit points
- **MSc Thesis:** 40 credit points

Table 1: First Part - Parasitology Master Degree

Program: Parasitology Master degree		Credit Points		ILOs
Title	Code	CPs	Total	
FIRST PART: COMPULSORY COURSES:				
a-Helminthology	PARA 805 Ta	4	8	A.(1-2-3), B. (1-3), C. (1-2), D (1-3)
Immunology	PARA 806	2		A (4-5-11) , B (3-4-5-6)
Molecular biology	PARA 803	2		A (13), B (3-4-5-6)
ELECTIVE COURSES:				
Fundamental microscopy	PARA 805 FM	1	1	A (12), B (3-4), C (1), D (4)
Special laboratory investigations	PARA 805 SLI	1		A (6-7-12-14), B (3-4-5-6), C (1-2-3-4), D (2-4-6)
**PRACTICAL TRAINING PROGRAMS (phase 1):				
Ocular micrometry		6	30	C (1-2), D (4)
Examination of stool, soil and urine for parasitic stages		10		C (1-2- 6), D (4)
Examination of blood for parasitic stages		10		C (1-2-6), D (4)
Research methodology (1)		4		A.(1-3), B.(1-2-3-4-5-6), C.1-4, D.1-2-3-6
*Biostatistics & Basic computing		-		A (14), B (2), D (1)
SCIENTIFIC ACTIVITIES:				
Conferences, Seminars, Workshops, Departmental activities, assignments, projects		1	1	D (3)
Total credit points			40	

Table 2: Second Part - Parasitology Master Degree

Program: Parasitology Master degree		Credit Points		ILOs
Title	Code	CPs	Total	
SECOND PART: COMPULSORY COURSES:				
b- Protozoa	PARA 805 Tb	4	13	A.(1-4), B.(1-4), C.(1-2), D. (1-4)
c- Entomology	PARA 805 Tc	4		A.(1-5-8-9-10), B. (1-4), C.(1-2), D. (1-4)
d- Molecular and immuno-Parasitology	PARA 805 Td	2		A (4-11-13), B (3-4-5-6)
e- Applied Parasitology	PARA 805 Te	3		A (6-7-12),b (1-4-5-6), C (1-2-3-4), D (3-4)
ELECTIVE COURSES:				
Advanced diagnostic Parasitology	PARA 805 ADP			A (12-13), B (3-5-7), C (1-3)
Design and analysis of epidemiological studies	PARA 805 DAES			A (14), B (2-3-5-7), C (4), D (2)
*PRACTICAL TRAINING PROGRAMS (phase 2):				
Research methodology (2)		7	45	A (14), B (1-4-5), C (4), D (2)
Application of immunological techniques in Parasitology		7		A (11-13), C (2-3-4)
Application of molecular technologies in Parasitology		7		A (14), B (2-3), C (4), D (2)
Mounting techniques for arthropods of medical importance		12		C (1-2), D (4)
Mounting techniques for helminthes		12		C (1-2), D (4)
SCIENTIFIC ACTIVITIES				
Conferences, Seminars, Workshops, Departmental activities, assignments or projects.		2	2	D (3)
MASTER THESIS:		40	40	
Total credit points			100	

N.B. Not all training programs will be available at the same time. Training program can be taken only after consultation with the responsible staff members. Announcement for any particular program will be at least month before starting the program.

Credit points and learning hours:

The credit points assigned to each module or unit are based on the approximate number of hours. The student is expected to spend hours of learning to achieve the learning outcomes for that module. There is broad agreement amongst Cairo University departments that one credit point represents 15 hours of learning. Teaching strategy depends on calculated total learning hours. Total learning hours include contact time (theoretical lectures, practical sessions and the completion of formative assessment tasks and revision) plus self learning (private reading and study). Therefore, learning hours of each module are determined according to the proposed ILOs of each module.

Facilities required for teaching and learning:

List of references

- Course notes
- Essential books (text books):

Hunter's Tropical Medicine and Emerging Infectious Disease (Ninth Edition) ISBN: 978-1-4160-4390-4

- Periodicals, Web site:
American Journal of Tropical Medicine & hygiene – Parasitology United Journal
DPDx - CDC Parasitology Diagnostic Web Site (www.dpd.cdc.gov/)

Master Thesis:

All master-degree students should prepare a thesis in Medical Parasitology. The department and the ethical committees must approve the protocol of the research. The thesis should include a review part and a research part. The Thesis is supervised by one or more senior staff members from Medical Parasitology and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor.

Scientific Activities:

The candidates should participate in the scientific activities of the department such as:

- Seminars.
- Journal clubs.
- Scientific meetings.
- Workshops.
- Conferences.
- Attending Thesis discussions.
- Preparation of portfolio (with reflection of self assessment)

Each activity is monitored and given credit points registered in a special section in the logbook. Candidates should collect the required points before being allowed to sit for final exam.

VI. Regulations for Progression and Program Completion

After finishing the first part, attending the specified courses and collecting the required credit points, the student should pass the first part examination in April before proceeding to the second part. In case the student fails to pass the examination, he/she can resubmit for the next examination in October. After passing the first part, the student submits a protocol for master thesis at the beginning of second part. Before submitting to the final exam in May (or November in case of failure), he/she should finish the thesis and get approval, complete phase 2 of the training program, and collect the required credit points. The candidate will receive his/her degree after passing this final exam. Master degree should be obtained within a maximum of 6 years after registration date.

Attendance criteria:

The prerequisite for entry the final exam is 75% attendance of the lectures as shown in the attendance book.

VII. Assessment

A: Assessment Tools

- **Supervision and Monitoring of The Program**

According to the Faculty of Medicine, Cairo University Bylaws, professors carry continuous assessment during the program. This continuous assessment is designed and arranged according to each module, in the form of mid & semi- final course quizzes. A practical training program logbook will be kept for each candidate to document all his/her practical activities as well as his/her participation in different scientific activities. The head of the department should allow the students to undergo the final examination when they complete their training program and collect the credit points needed.

- **Formative Assessment**

For assessment of students achievement during the theoretical & training courses.

- **Formal Assessment**

According to the Faculty of Medicine, Cairo University Bylaws for Postgraduate Programs. Students should be assessed at the end of the program (Written, Practical and Oral Exams) plus the continuous evaluation.

The examination is as follows:

- **Written examination:** The exam is put by a committee of at least 3 senior professors
- **Practical:** The exam is put by at least 3 professors and supervised by at least 4 assistant professors and the materials are prepared by at least 4 lecturers
- **Oral examination:** The exam is attended by a committee of 2 professors for each student.
- **Continuous evaluation:** will be at the end of each module or training program

Final exam First Part:

- **Written exam:** 3 written papers will be held for the 3 compulsory modules including short questions, MCQ, EMCs and problem solving.
- **Oral exam:** 3 oral exams for 3 compulsory modules.
- **Practical exam**

Final exam Second Part:

- **Written exam:** 2 written 1 credit point will be held for the compulsory modules including short questions, MCQ, EMCs and problem solving.
- **Oral exam**
- **Practical exam**

B: Assessment Schedule:

After acceptance of the thesis, 4 final exams will be held by the end of the course; For compulsory courses 2 written exams of 3 hours duration each in 2 days, followed by oral and practical exam

C: Weighing Of Assessment (Marks allocated to courses):

- (50 marks for each credit point)

Weighing & Grading system:

Course		written	Oral	Practical	Total (1200)
First part:		400			
Helminthology	Written exam.(3hs+practical exam+ oral exam)	100	50	50	200
Molecular biology	Written exam. (2hs+practical exam+ oral exam)	60	40	-	100
Immunology	Written exam. (2hs+practical exam+ oral exam)	60	40	-	100
Second Part:		650			
Protozoa & entomology	Written exam.(3hs+practical exam+ oral exam)	160	125	125	410
Molecular & Immuno-parasitology	Written exam.(3hs+practical exam+ oral exam)	140	50	50	240
Applied parasitology					

- It is mandatory to pass all the papers of written exams separately.
- The passing mark in any written exam is $\geq 60\%$.

VIII. Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1. Senior Students	Questionnaire	All the PG students (100%)
2. Alumni	Questionnaire	(70%)
3. Stakeholders	A meeting will be arranged	70%
4. External Evaluators	Review program and courses	Once before implementation Bi-annual report
5. College Quality Assurance committee	Annual program reviewer	

Signatures***Program Coordinator***

Prof. Dr. Jomana Abd El-aziz
Prof. Dr. Safeya El- Bassiouni

Head of Department

Prof. Dr. Mona Mahmoud

Matrix for the Educational Program for the Master Degree in Parasitology Department

Course	Code	A Knowledge and understanding														B Intellectual Skills							C Practical Skills				D General and transferable skills				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	1	2	3	4	1	2	3	4	5
Compulsory courses (first part)																															
Helminthology	PARA 805Ta	*	*	*	*			*			*	*	*		*		*	*					*	*			*		*		
Immunology	PARA 806				*	*					*						*	*	*	*											*
Molecular	PARA 803											*					*	*	*	*											*
Elective courses (first part)																	*	*												*	*
microscopy	PARA 805 FM											*					*	*							*					*	*
laboratory investigations	PARA 805 SLI						*	*				*		*			*	*	*	*			*	*	*	*	*	*	*	*	*
Compulsory courses (second part)																															
Protozoa	PARA 805 Tb	*			*										*		*	*	*	*			*	*			*		*		*
Entomology	PARA 805 Tc	*				*			*	*	*				*		*														*
Molecular and immune-	PARA 805 Td				*						*		*				*	*	*	*											*
Applied Parasitology	PARA 805 Te						*	*				*		*	*		*	*	*				*	*	*	*	*	*	*	*	*
Elective courses(second part)																															
Advanced diagnostic												*	*				*		*			*									*
Design and analysis													*		*	*	*		*			*				*	*	*			*
Training programs (first & second part)	PARA 805 P1& PARA 805 P2					*					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*